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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,182	06/30/2003	Avraham Mordehay Nathan	3037/1	8791

7590 10/13/2004

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,182

Applicant(s)

NATHAN ET AL.

Examiner

Thai-Ba Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,10-13 and 17 is/are rejected.
- 7) ☐ Claim(s) 6-9 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on August 25, 2004. Applicant's cooperation in correcting the informalities in the drawing and specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim objections relating to informalities as well as indefinite claim language is also appreciated. Claims 1-3 and 5-14 were amended; claims 17 were added; and claims 4 and 15-16 were cancelled. Additionally, Figure 1a was added, and Figure 3 was cancelled.

Drawings

Applicants are required to submit a set of the substitute drawings, which have to be consecutively renumbered as following:

1. Figure 1;
2. Figure 1a;
3. Figure 2;
4. Figure 4 should be renumbered as -- **Figure 3** --;
5. Figure 5 should be renumbered as -- **Figure 4** --; since Figure was cancelled.

Specification

The disclosure is objected to because of the following informalities:

- On Pages 5-6, in the Brief Description of the Drawings, "**Figure 4**" and "**Figure 5**" should be renumbered as -- **Figure 3** -- and -- **Figure 4** --, since *the original Figure 3* was cancelled.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5, 10-12, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Perkins (Patent Number 22,152,564).

Perkins discloses a rotary variable-volume machine comprising;

(a) at least one piston element (15) (See Figures 1, 3, and 7);

(b) a piston mechanism configured to move said piston element (15) in a motion that is simultaneous orbital motion about a primary axis (through shaft 28) and rotation about a secondary axis (through shafts 22) that passes through said piston element (15), such that said piston element sweeps out an annular path of variable cross-section (See Figure 1), said piston mechanism including at least one rotor (13) configured so as to rotate about the primary axis of rotation (through the shaft 28) said at least one piston element (15) being deployed on said rotor (13) (See Figure 1);

(c) at least a first and a second stator portions (31 and 32) containing between them a modified toroidal operational volume (11), said modified toroidal operational volume defined by said annular path, such that said at least one piston element (15) moves through said modified toroidal operational volume, said piston element contacting walls of said modified toroidal operational volume (See Figures 1 and 3, and Page 1, Column 2, lines 41-49);

(d) at least one inlet opening (20) through said stator housing into said modified toroidal operational volume (See Figures 2-3);

(e) at least one outlet opening (27) through said stator housing from said modified toroidal operational volume (See Figures 2-3);

wherein said rotor (13) is at least partially deployed within said modified toroidal operational volume, said rotor and said at least one piston element (15) passing between said at least first and second stator portions (31, 32)

(f) a main shaft (via shaft 28) deployed in said stator housing (10), said main shaft (28) configured so as to rotate about said primary axis (See Figures 1-3);

wherein the ratio of the piston rotation to rotor rotation is 1:2 (clearly seen in Figure 1);

wherein said secondary axis of rotation (through shafts 22) is implemented as at least a second axis of rotation, is parallel to said primary axis (through shaft 28) , such that said at least one piston element (15) rotates about said second axis of rotation (through shafts 22) (See Figure 1);

wherein said stator housing includes an inner (51) and an outer stator element (10, 31, 32) (See Figure 2);

wherein said rotor (13) is implement as a cylinder deployed within said modified toroidal operational volume (11), said cylinder configures so as to rotate about said inner stator element (51) and said main shaft (28) and said second axis lying substantially in said rotor (13) (See Figures 1-3); and

wherein the direction of piston rotation (in clockwise rotation) is opposite to the direction of rotor rotation (in a counterclockwise direction) (clearly seen in Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins (Patent Number 2,152,564), in view of Mason (Patent Number 473,940).

Perkins discloses the invention as recited above, and further discloses said at least one piston element (15) being implemented as at least one pair of piston elements (15) deployed on said rotor, and each one of said pair of said piston elements (15) is deployed opposite another one of said pair at 180° and lies in a plane that is at 90° to a plane of another one of said pair, and at any point of rotation where any one of said piston elements lies within a cross-section of said rotor, a surface area of said stator housing contacts said rotor thereby creating a seal area (See Figures 1-3);

However, Perkins fails to disclose said piston elements having at least a region with a thickness substantially equal to the thickness of said rotor.

Mason teaches that it is conventional in the pump art, to utilize said piston elements (J, K, L, M) having at least a region with a thickness substantially equal to the thickness of said rotor (I) (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized said piston elements having at least a region with a thickness substantially equal to the thickness of said rotor, as taught by Mason, to improve the efficiency of the Perkins device.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins (Patent Number 2,152,564), in view of Hippocrates (Patent Number 4,898,525).

Perkins discloses the invention as recited above; however, Perkins fails to disclose a ratio of piston rotation to rotor rotation being 1:2.

Hippocrates teaches that it is conventional in the pump art, to utilize a ratio of piston rotation to rotor rotation being 1:2 (See Figure 1, and Claim 2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a ratio of piston rotation to rotor rotation being 1:2, as taught by Hippocrates, to improve the rotational interaction of the rotor and the pistons.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins (Patent Number 2,152,564), in view of Ballinger (Patent Number 4,741,308).

Perkins discloses the invention as recited above, and further discloses said at least one pistons is attached to rotatable axle, said axle therefore lying on said second axis of rotation (See Figures 1-3); however, Perkins fails to disclose the rotation of said axle affected by interaction of gears.

Ballinger teaches that it is conventional in the rotary engine art, to utilize the rotation of said axle affected by interaction of gear (140) statically affixed to said stator housing and at a second gears (1112, 114) affixed to said second axle, such that rotation of said main shaft causes rotation of said axle and said stator (See Figure 3).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the rotation of said axle affected by interaction of gears, as taught by Ballinger, to control the rotational interaction of the rotor and the pistons.

Allowable Subject Matter

Claims **6-9 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-3, 5-14, and 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Johnson (US Patent Number 1,389,874) discloses a rotary steam engine.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

However, the examiner's new telephone number (751) 272-4867 will become effective after the expected changeover date of November 22, 2004.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
September 25, 2004


Thai-Ba Trieu
Patent Examiner
Art Unit 3748